

REMARKS

In this Amendment, Claims 1, 3, 6, 27, 29 have been amended, Claims 4-5, 7, 30 have been canceled without prejudice, and new Claim 31-33 have been added.

Claim 3 has been amended to incorporate the features of dependent Claims 5 and 7, which have accordingly been canceled as set forth above. Claim 1 has been amended for consistency with Claim 3. Claim 6, which previously depended from Claim 5, has been amended to depend from Claim 3.

Support for the amendments of Claims 27 and 29 appears in the specification at least at page 33, lines 8-14 and in FIGS. 4A, 4B, and 4D.

Support for new Claim 31 appears in the specification at least at page 23, lines 14-31 and in FIG. 6. Support for new Claim 32 appears in the specification at least at page 33, lines 8-24 and in FIGS. 4A, 8A and 8B. Support for new Claim 33 appears in the specification at least at page 16, line 20 to page 17, line 6 and in FIGS. 4A, 4B, 4C, and 4D

Claims 2-3, 6, 8-16 satisfy 35 U.S.C. 112, second paragraph.

The Examiner states:

In claim 2 it is unclear to what type of component the "gate" refers. A gate can have many definitions (a mechanical structure, a region of a transistor, etc.) and the invention is identifies the "gate" as a component of a lead frame. This should be identified as such in the claims. (Office Action, page 2.)

The Examiner's statement is respectfully traversed.  
Applicants' specification at page 2, lines 17-21 sets forth:

The other of the tie bars 5 is connected to a gate 16 (shown at the upper and left edge of FIG. 10A) serving to make resin easily flow toward the die pad 4 during the manufacturing process (molding step). (Emphasis added.)

Thus, one of skill in the art would understand what is being claimed in Claim 2 when read in light of the specification.

The Examiner further states:

The claims in for example 2 and 10 refer to a "normal lead frame". It is unclear what determines normal. If the applicant is referring to lead frame orientation then the type of orientation should be specifically identified for lead frames many have many orientations where none are considered no more normal than another.  
(Office Action, page 2.)

The Examiner's statement is respectfully traversed.  
Applicants' specification at page 2, line 7 to page 3, line 10 sets forth:

Referring to FIG. 10A, a **typical normal lead frame NLF** includes a space 3 of a prescribed size formed at the center and a frame body 2 of a board type formed at both sides of the space 3 for maintaining and supporting the whole structure. A die pad 4 of a rectangular board type to mount a die 30 during the manufacturing process is disposed at the center of the space 3. The die pad 4 has four edges, to which ends of four tie bars 5 are connected respectively. Three of the tie bars 5 are connected to buffering connection boards 18 at the other ends respectively. The buffering connection boards 18 are connected to the frame body 2.

The other of the tie bars 5 is connected to a gate 16 (shown at the upper and left edge of FIG. 10A) serving to make resin easily flow toward the die pad 4 during the manufacturing process (molding step). The gate 16 is connected to the frame body 2.

Here, the gate 16 has a dent part 16A formed at one side thereof to indicate the position of the gate 16 and to allow the **normal lead frame NLF** to be easily discriminated from an **inverted lead frame (ILF)**, which will be described hereinafter. Moreover, each of the tie bars 5 is bent downwardly with a prescribed slant in a specific area in such a manner that the die pad 4, which is connected and supported by the tie bars 5 is located at a lower area than the frame body 2, i.e., is downset.

Meanwhile, a plurality of inner leads 6 are arranged around the die pad 4 radially in prescribed intervals from the die pad 4. Furthermore, the inner

leads 6 are connected to a plurality of outer leads 10, respectively. Ends of the outer leads 10 are integrally connected to straight support bars 12. Additionally, the straight support bars 12 are connected to a plurality of bent support bars 14. The bent support bars 14 are connected to the frame body 2.

Between the inner leads 6 and the outer leads 10, a dambar 8 is provided at right angles to the longitudinal direction of the inner leads 6 or the outer leads 10. The dambar 8 serves to prevent resin from overflowing to the outer leads 10 during molding.

**FIG. 10B is a plan view showing an example of a conventional inverted lead frame ILF.** Note that the gate 16 for injecting resin (shown at the upper and right edge of FIG. 10B) is at a different location compared to the gate 16 of the normal lead frame NLF. (Emphasis added.)

Thus, one of skill in the art would understand what is being claimed in Claims 2 and 10 when read in light of the specification.

The Examiner further states:

In claim 16 it is unclear how a die has a specific pattern and what is meant by "specific pattern" is being recited. (Office Action, page 2.)

The Examiner's statement is respectfully traversed.  
Applicants' specification at page 23, lines 17-21 sets forth:

**... the specific patterns 32 formed in the vicinity of the edges located outside of the bond pads P of the die 30, in stark contrast to the conventional method. That is, generally, in the vicinity of the edges of the die 30, the specific patterns 32 such as pictures, figures, characters or numbers having intrinsic color are formed. In other words, the specific patterns 32 formed in the vicinity of the edges of the die 30 have different shapes from each other.** (Emphasis added.)

Also see for example FIGS. 5B, 5C, 6, 7B and 7C regarding the specific patterns 32. Thus, one of skill in the art would understand what is being claimed in Claim 16 when read in light of the specification.

For the above reasons, Applicants respectfully request reconsideration and withdrawal of this rejection.

Claim 3 is novel over Matoba (6,389,653).

Initially, Applicants note that Claim 3 is rejected under 35 U.S.C. 102(b) as being anticipated by Matoba. Matoba issued on May 21, 2002, which is not one year prior to the filing date of January 10, 2001 of the present application. Accordingly, the Examiner has failed to demonstrate that Matoba is prior art pursuant to 35 U.S.C. 102(b). However, to the extent Matoba may be prior art pursuant to 35 U.S.C. 102(e), Applicants will address the rejection of Claim 3 as being anticipated by Matoba.

Regarding Matoba, the Examiner states:

Matoba shows in figure 14 a structure comprising a substrate comprising **an unsymmetrical part 3** and a clamp 2 whereby the unsymmetrical part is visible through an observation hole shown at 21 (Office Action, page 2, emphasis added.)

However Matoba teaches:

The belt end fastener 1 of this invention is a two-member structure which is composed of a socket 2 and a **plug 3** to be inserted in the socket 2, as shown in FIG. 1. Both the socket 2 and the plug 3 are formed of thermoplastic resin, such as polyamide, polyacetal, polypropylene or polybutyleneterephthalate, by injection molding or extrusion molding, or are formed of metal, such as aluminum alloy or zinc alloy, by die casting. (Col. 4, lines 1-8, emphasis added.)

For at least the above reasons, Matoba does not teach or suggest:

A structure comprising:

a substrate comprising an unsymmetrical part selected from the group consisting of a dent part of a gate and a plated layer on a gate; and a clamp, the unsymmetrical part being visible through an observation hole of the clamp,

as recited in amended Claim 3, emphasis added. Accordingly, Claim 3 is allowable over Matoba.

For the above reasons, Applicants respectfully request reconsideration and withdrawal of this rejection.

Claims 1-3, 6, 8-16, 27-29 are patentable over Applicant's stated art figures in view of Moon (5,796,161).

The Examiner states:

Applicant's prior art figures 9-14 and the admitted prior art in discussed in the disclosure on pages 1-10 show, discuss or suggest use of the various features recited in the claims **except for the observation holes** recited in claims 1 formed in an outer circumference of a window to set the gate of the lead frame. Moon shows a clamp 11, window 12A or 22A, lead frame 25 and gate hole 5. It would have been obvious to one having ordinary skill in this art to provide an observation hole in the clamp of the prior art to improve alignment in view of the teachings of Moon ... (Office Action, page 3, emphasis added.)

The Examiner's statement is respectfully traversed. The Examiner admits that the observation holes are not shown in figures 9-14. Further, the clamp 1100 (FIG. 11) lacked the observation holes. Accordingly, the dent part 16a of the gate 16 of the typical normal lead frame NLF, for example as shown in FIG. 10A, was covered by the clamp 1100 as shown in FIG. 13A. Thus, although the typical normal lead frame NLF included the dent part 16a of the gate 16, exposure of the dent part 16a through an observation hole for purposes of alignment was not recognized by those of skill in the art. Accordingly, the typical normal lead frame NLF taught away from use of observation holes and one of skill in the art would not combine the Applicants' stated art with Moon. Applicants respectfully

submit that the Examiner is improperly using hindsight reconstruction to deprecate Applicants' claimed invention.

For at least the above reasons, Applicants' stated art in view of Moon does not teach or suggest:

A structure comprising:

**a substrate comprising an unsymmetrical part selected from the group consisting of a dent part of a gate and a plated layer on a gate; and a clamp, the unsymmetrical part being visible through an observation hole of the clamp,**

as recited in amended Claim 3, emphasis added. Accordingly, Claim 3 is allowable over Applicants' stated art in view of Moon.

Claims 1-2, 6, 8, 9-16 and new Claims 31-33, which depend from Claim 3, are allowable for at least the same reasons as Claim 3. Claims 27 and 29 are allowable for reasons similar to Claim 3. Claim 28, which depends from Claim 27, is allowable for at least the same reasons as Claim 27.

Further, new Claim 32 recites:

**The structure as claimed in Claim 3 wherein the clamp comprises:**

**a window formed to expose upward a die mounted on a die pad of the substrate and leads on an outer circumference of the die; and two observation holes comprising the observation hole.** (Emphasis added.)

For this additional reason, Claim 32 is allowable.

Further, new Claim 33 recites:

**The structure as claimed in Claim 3 wherein the substrate further comprises a support bar, the structure further comprising:**

**a first lead eye box and a first lead eye point on the unsymmetrical part of the substrate and a second lead eye box and a second lead eye point on the support bar of the substrate.** (Emphasis added.)

For this additional reason, Claim 33 is allowable.

For the above reasons, Applicants respectfully request reconsideration and withdrawal of this rejection.

Claims 3, 8, 10, 12-16, 27, 28 are novel over Moon.

The Examiner states:

Moon shows a clamp 11, a window 12A or 22A, lead fame 25 and gate hole 5 and die 6 ... (Office Action, page 4, emphasis added.)

However, the Examiner has failed to callout where Moon teaches or suggests:

A structure comprising:  
a substrate comprising an unsymmetrical part selected from the group consisting of a dent part of a gate and a plated layer on a gate; and  
a clamp, the unsymmetrical part being visible through an observation hole of the clamp,

as recited in amended Claim 3, emphasis added.

Accordingly, Claim 3 is allowable over Moon. Claims 8, 10, 12-16, which depend from Claim 3, are allowable for at least the same reasons as Claim 3. Claim 27 is allowable for reasons similar to Claim 3. Claim 28, which depends from Claim 27, is allowable for at least the same reasons as Claim 27.

For the above reasons, Applicants respectfully request reconsideration and withdrawal of this rejection.

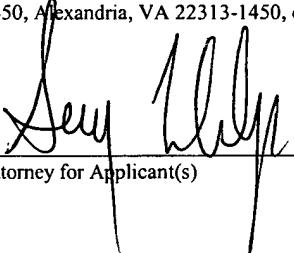
#### CONCLUSION

Claims 1-3, 6, 8-16, 27-29, 31-32 are pending in the application. For the foregoing reasons, Applicants respectfully request allowance of all pending claims. If the Examiner has any questions relating to the above, the Examiner

is respectfully requested to telephone the undersigned Attorney for Applicant(s).

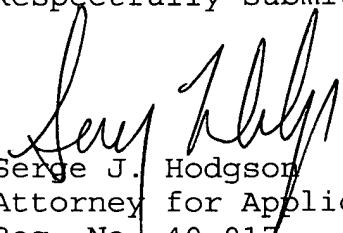
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Attorney for Applicant(s)

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January 12, 2005  
Date of Signature

Respectfully submitted,

  
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